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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,110	03/26/2001	Junichi Odagiri	1075-1150	6258

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EXAMINER	
BAKER, CHARLOTTE M	
ART UNIT	**PAPER NUMBER**
2626	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,110	ODAGIRI ET AL.	
	Examiner	Art Unit	
	Charlotte M Baker	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 032301 & 032601.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities: p. 46, ln. 6, replace "to 3" with "1 to 3".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 5-10, 12-19, 24, and 26-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Fuchigami et al. (6,657,746).

Regarding claim 1: Fuchigami et al. disclose a dividing step (4, 5 and 6) of beforehand defining a plurality of regions (plurality of areas, col. 5, ln. 60 and col. 6, ln. 51 and 58) obtained by dividing the whole of said transformation target color space (col. 5, ln. 59-62). Fuchigami et al. disclose "that any types of color systems may be used as the original color space and the destination color space" (col. 4, ln. 50-52). Fuchigami et al. further disclose a color transformation table creating step (LUT constructing section 9) of creating said color transformation table (LUT 1c) by using a plurality of color transformation formulas (conversion matrix parameter, col. 7, ln. 30-37) corresponding to said plural regions (for each divided area), respectively, said plural regions being defined at said dividing step (area determining section 8).

Regarding claim 3: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose a relationship creating step (CMY color data corresponding to RGB color data, col. 5, ln. 16-18) of creating a relationship between a color signal in said transformation source color space (RGB) and a color signal in said transformation target color space (CMY) by using said color transformation formula (conversion matrix parameter, col. 7, ln. 30-37) according to each region (for each divided area) for each of said color transformation formulas (conversion matrix parameter); a creation processing step (color converting section 1b) of creating said color transformation table (LUT 1c) on the basis of said relationship created for each of said color transformation formulas (conversion matrix parameter) at said relationship creating step (CMY color data corresponding to RGB color data, col. 5, ln. 16-18).

Regarding claim 5: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose wherein said transformation target color space is a uniform color space (R, G, and B can be converted into L*, a*, and b*, col. 6, ln. 1-25). Also, "it is a matter of course that any types of color systems may be used as the original color space and the destination color space" (col. 4, ln. 50-52).

Regarding claim 6: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose wherein said plural regions (respective divided areas) have regions overlapping on each other (overlapping area between adjacent divided areas, col. 8, ln. 1-5).

Regarding claim 7: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose wherein, at said dividing step (4, 5 and 6), the whole of said transformation target color space (col. 5, ln. 59-62) is divided according to hue angle (divided on the basis of hue, col. 5, ln. 59-64 and col. 6, ln. 37-48) to provide said plural regions (plurality of areas).

Regarding claim 8: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose wherein, at said dividing step (4, 5 and 6), the whole of said transformation target color space (col. 5, ln. 59-62) is divided according to chroma (divided on the basis of chroma, col. 5, ln. 59-67) to provide said plural regions (plurality of areas).

Regarding claim 9: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose wherein, at said dividing step (4, 5 and 6), the whole of said transformation target color space (col. 5, ln. 59-62) is divided according to lightness (divided on the basis of brightness, col. 5, ln. 59-62) to provide said plural regions (plurality of areas).

Regarding claim 10: Fuchigami et al. satisfy all the elements of claim 3. Fuchigami et al. further disclose a determining step (first, second, and third color space division finish signals) of determining that a color transformation result is correct (data base 2 stores no more sets, col. 9, ln. 21-26 and col. 10, ln. 6-11 and col. 10, ln. 58-62) when said color transformation result (conversion data pieces), into which one color signal in said transformation source color space (RGB) is transformed through a color transformation formula (conversion matrix parameter, col. 7, ln. 30-37) when said relationship is created at said relationship creating step, belongs to a region corresponding to said color transformation formula (CMY color data corresponding to RGB color data, col. 5, ln. 16-18); wherein at said creation processing step (color converting section 1b), said color transformation table is created (LUT 1c) on the basis of said color transformation result determined to be correct (data base 2 stores no more sets) at said determining step (first, second, and third color space division finish signals).

Regarding claim 12: Fuchigami et al. satisfy all the elements of claim 10. Fuchigami et al. further disclose wherein when there are a plurality of color transformation results (first, second,

and third color space division finish signals) determined to be correct (data base 2 stores no more sets) with respect to said one color signal at said determining step (first, second, and third color space division finish signals), a color transformation result with respect to said one color signal is calculated (conversion matrix parameter, col. 7, ln. 30-37) at said creation processing step (color converting section 1b) on the basis of values relating to distances between said plural color transformation results (parameter calculating section 7) determined to be correct (no more sets of conversion data pieces) and boundaries of said regions to which said plural color transformation results belong (area number counter 7a).

Regarding claim 13: Fuchigami et al. satisfy all the elements of claim 11. Arguments analogous to those stated in the rejection of claim 12 are applicable.

Regarding claim 14: Fuchigami et al. satisfy all the elements of claim 10. Fuchigami et al. further disclose wherein there are a plurality of color transformation results (first, second, and third color space division finish signals) with respect to said one color signal determined to be correct (no more sets of conversion data pieces) at said determining step (first, second, and third color space division finish signals), one of said plural color transformation results determined to be correct is selected as a color transformation result (parameter calculating section 7) with respect to said one color signal at said creation processing step (color converting section 1b) on the basis of values relating to distances between said plural color transformation results (parameter calculating section 7) determined to be correct (no more sets of conversion data pieces) and boundaries of said regions to which said plural color transformation results belong (area number counter 7a).

Regarding claim 15: Fuchigami et al. satisfy all the elements of claim 11. Arguments analogous to those stated in the rejection of claim 14 are applicable.

Regarding claim 16: Fuchigami et al. satisfy all the elements of claim 10. Fuchigami et al. further disclose wherein when there is no color transformation result (no conversion matrix parameter is assigned, col. 11, ln. 12-14) with respect to said one color signal determined to be correct (no more sets of conversion data pieces) at said determining step (first, second, and third color space division finish signals), a color transformation result with respect to said color signal is calculated at said creation processing step (color converting section 1b) on the basis of reciprocals (indicating that parameter calculation has been finished, col. 11, ln. 23-24) of values (signal value) relating to distances between said plural color transformation results (parameter calculating section 7) obtained with respect to said color signal at said relationship creating step (CMY color data corresponding to RGB color data, col. 5, ln. 16-18) and boundaries of said regions to which said respective color transformation results belong (area number counter 7a).

Regarding claim 17: Fuchigami et al. satisfy all the elements of claim 11. Arguments analogous to those stated in the rejection of claim 16 are applicable.

Regarding claim 18: Fuchigami et al. satisfy all the elements of claim 10. Arguments analogous to those stated in the rejection of claim 16 are applicable. In addition, Fuchigami et al. disclose one of a plurality of color transformation results (parameter calculating section 7, col. 11, ln. 5-11).

Regarding claim 19: Fuchigami et al. satisfy all the elements of claim 11. Arguments analogous to those stated in the rejection of claim 18 are applicable.

Regarding claim 24: Fuchigami et al. disclose the entire structure of an image forming apparatus that incorporates a color conversion apparatus (apparatus for creating a color transformation table) comprising: a dividing step (4, 5 and 6) of beforehand defining a plurality of regions (plurality of areas, col. 5, ln. 60 and col. 6, ln. 51 and 58) obtained by dividing the whole of said transformation target color space (col. 5, ln. 59-62). Fuchigami et al. disclose "that any types of color systems may be used as the original color space and the destination color space" (col. 4, ln. 50-52). Fuchigami et al. further disclose a color transformation table creating step (LUT constructing section 9) of creating said color transformation table (LUT 1c) by using a plurality of color transformation formulas (conversion matrix parameter, col. 7, ln. 30-37) corresponding to said plural regions (for each divided area), respectively, said plural regions being defined at said dividing step (area determining section 8).

Regarding claim 26: Fuchigami et al. satisfy all the elements of claim 24. Fuchigami et al. disclose the entire structure of an image forming apparatus that incorporates a color conversion apparatus (apparatus for creating a color transformation table). The method steps outlined in the rejection of claim 3 are performed by the apparatus of claim 26. The apparatus, which performs the method steps as outlined in the rejection of claim 3 is the image processing section.

Regarding claim 27: Fuchigami et al. satisfy all the elements of claim 25. Arguments analogous to those stated in the rejection of claim 26 are applicable.

Regarding claim 28: Arguments analogous to those stated in the rejection of claim 1 are applicable. In addition, Fuchigami et al. further disclose a computer readable record medium (LUT 1c is inherently stored in a computer readable record medium); a color transformation table creation unit (LUT constructing section 9).

Regarding claim 29: Fuchigami et al. satisfy all the elements of claim 28. Arguments analogous to those stated in the rejection of claim 25 are applicable. In addition, Fuchigami et al. further disclose an image processing section 1, which performs color transformation creating and the program is contained (LUT 1c is inherently stored in a computer readable record medium).

Regarding claim 30: Fuchigami et al. satisfy all the elements of claim 28. Arguments analogous to those stated in the rejection of claim 25 are applicable.

Regarding claim 31: Fuchigami et al. satisfy all the elements of claim 29. Arguments analogous to those stated in the rejection of claim 26 are applicable.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 4, 11, 20-23, 25, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchigami et al. in view of Rolleston (5,471,324).

Regarding claim 2: Fuchigami et al. satisfy all the elements of claim 1. Fuchigami et al. further disclose a reading step (color image reading section 1a) of reading a plurality of color regions (RGB) on a color chart (LUT 1c) by said color input device (color image reading section 1a), and outputting a color signal (color image recording section 1d) in said transformation target color space (C, M, Y and/or K) corresponding to each of said color regions from said color input device (color converting section 1b); wherein, at said color transformation table creating step (LUT constructing section 9), said color transformation formula (conversion matrix parameter,

col. 7, ln. 30-37) is created for each of the said regions in said transformation target color space (C, M, Y and/or K).

Fuchigami et al. fail to specifically address a colorimeter, or spectral reflectance associated with a colorimeter. Rolleston discloses a colorimetric step (colorimetric digital data, Fig. 2) of measuring said plurality of color regions (colorimetric R_o, G_o, B_o space, col. 5, ln. 31-36) by a colorimeter, and outputting spectral reflectance (implicit to a colorimeter) corresponding to each of said color regions from said colorimeter; a classifying step (color space transform 20) of classifying said spectral reflectance (implicit to a colorimeter) according to which region among said plural regions (C_p, M_p, Y_p, K_p) in said transformation target color space (C, M, Y, and/or K) a color signal (colorant values, col.5, ln. 48-55) in said transformation target color space (C, M, Y, and/or K) to said spectral reflectance (implicit to a colorimeter) belongs to; a spectral characteristics estimating step (printed output image has a color that is colorimetrically similar to the original image, col. 5, ln. 55-60) of estimating spectral characteristics (implicit to a colorimeter) of said color input device (scanner 10) on the basis of said color signal (colorant values, col.5, ln. 48-55) outputted from said color input device (scanner 10) at said reading step (scanning operation) and said spectral reflectance outputted from said colorimeter (colorimetric digital data) at said colorimetric step; on the basis of said spectral reflectance (implicit to a colorimeter) classified at said classifying step (color space transform 20) and said spectral characteristics estimated at said spectral characteristics estimating step (printed output image has a color that is colorimetrically similar to the original image, col. 5, ln. 55-60).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a colorimeter to decrease the scalloping effect by creating a new data value within the colorimetric value interval as taught by Rolleston (col. 4, ln. 33-35).

Regarding claim 4: Fuchigami et al. in view of Rolleston satisfy all the elements of claim 2. Arguments analogous to those stated in the rejection of claim 3 are applicable.

Regarding claim 11: Fuchigami et al. in view of Rolleston satisfy all the elements of claim 4. Arguments analogous to those stated in the rejection of claim 10 are applicable.

Regarding claim 20: Fuchigami et al. satisfy all the elements of claim 10. Fuchigami et al. fail to specifically address spectral reflectance. Rolleston discloses wherein said color transformation table (LUT and interpolation 140) correlates a color signal in said transformation source color space (RGB) with spectral reflectance (implicit to a colorimeter or spectrophotometer) according to a color transformation result as a color signal in said transformation target color space (C, M, Y and/or K) (col. 5, ln. 37-60 and col. 6, ln. 13-19 and col. 6, ln. 35-39).

Regarding claim 21: Fuchigami et al. satisfy all the elements of claim 11. Arguments analogous to those stated in the rejection of claim 20 are applicable.

Regarding claim 22: Fuchigami et al. satisfy all the elements of claim 20. Arguments analogous to those stated in the rejection of claim 13 are applicable. The capability of outputting colorimetric digital data (spectral reflectance) is disclosed by Rolleston (Fig. 2). A colorimeter could be attached to the image processing section 1 taught by Fuchigami et al. spectral reflectance of said one color signal is calculated (implicit colorimeter function).

Regarding claim 23: Fuchigami et al. in view of Rolleston satisfy all the elements of claim 21. Arguments analogous to those stated in the rejection of claim 22 are applicable.

Regarding claim 25: Fuchigami et al. satisfy all the elements of claim 24. Fuchigami et al. disclose the entire structure of an image forming apparatus that incorporates a color conversion apparatus (apparatus for creating a color transformation table). The method steps outlined in the rejection of claim 2 are performed by the apparatus of claim 25. Input unit (color image reading section 1a, col. 5, ln. 1-8); color transformation table creation unit (LUT constructing section 9).

Rolleston discloses a colorimeter (colorimetric digital data, Fig. 2); classification unit (color space transform unit 20); spectral characteristics estimation unit (implicit to a colorimeter).

Regarding claim 28: Fuchigami et al. disclose a color transformation table creation unit (LUT constructing section 9) for creating said color transformation table (LUT 1c) by using a plurality of color transformation formulas (conversion matrix parameter, col. 7, ln. 30-37) corresponding to a plurality of regions (plurality of areas, col. 5, ln. 60 and col. 6, ln. 51 and 58), respectively, said regions being obtained by dividing said transformation target color space (col. 5, ln. 59-62). Fuchigami et al. disclose "that any types of color systems may be used as the original color space and the destination color space" (col. 4, ln. 50-52).

Fuchigami et al. fail to specifically address a computer readable record medium. Rolleston discloses a computer readable record medium (device memory 150, col. 6, ln. 10-11) in which a color transformation table creating program for making a computer realize a function of creating a color transformation table (three dimensional lookup table, col. 6, ln. 10) correlating a color signal outputted from a color input device (scanner 10) in a color space of said input

device (RGB) with a color signal in a color space which is different from said transformation source color space is recorded (CMYK, but not limited to, col. 6, ln. 13-19).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the computer readable record medium in order to meet speed and memory requirements for a particular device as taught by Rolleston (col. 6, ln. 12-13).

Regarding claim 29: Fuchigami et al. in view of Rolleston satisfy all the elements of claim 28. The computer readable record medium (device memory 150) as taught by Rolleston could be connected to the image processing section 1 as taught by Fuchigami et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlotte M Baker whose telephone number is (703) 306-3456. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KA Williams

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER

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